

Cape Cod Watershed Five-Year Action Plan

SECTION 1: GOALS, OBJECTIVES, AND STRATEGIES

Goal #1: Clean Water

Maintain the overall quality of Cape Cod's water resources to preserve and restore the ecological integrity of marine and fresh waters.

Issue:

Excess nutrients such as nitrogen and phosphorous from non-point source pollution (septic systems, farms, golf courses, fertilizers, road runoff, marine discharges, wildlife, and atmospheric deposition) are degrading fresh and marine water quality and habitat. These nutrients lead to nuisance algae and plant growth, decreased water clarity and loss of shellfish and fish habitat. Cape Cod has inadequate infrastructure to manage wastewater and this negatively impacts human health and natural resources by contributing contaminants to water bodies. Bacterial contamination (coming from either septic systems or wildlife) is contributing to swimming beach closures across Cape Cod.

Objectives and Strategies:

1. Manage nutrient loads to maintain (or attain where impaired) designated uses of coastal and fresh waters pursuant to the MA Surface Water Quality Standards at 314 CMR 4.00.
 - (a) Evaluate potential pollutant loading associated with current and future watershed development and determine total allowable pollution load (TMDL) for each embayment.
 - (b) Develop policies and regulations to implement Total Maximum Daily Loads (TMDL's) for each embayment.
 - (c) Implement plans to appropriately control and manage pollutants in the watersheds using TMDL's.
 - (d) Develop policies for designation and management of nitrogen sensitive embayments.
 - (e) Provide a higher level of wastewater treatment beyond septic systems in locations exceeding recommended pollutant loads.
 - (f) Increase water quality monitoring to determine whether waters are meeting designated standards and to identify potential sources of pollution and presence of non-native species.
 - (g) Increase awareness of atmospheric deposition and climate change.

2. Reduce bacterial contamination to maintain (or attain where impaired) designated uses of coastal and fresh waters pursuant to the MA Surface Water Quality Standards at 314 CMR 4.00.
 - (a) Designate No Discharge Areas in Cape Cod coastal waters.
 - (b) Implement stormwater best management practices where runoff and drainage systems are adversely affecting water quality and shellfish habitat.

Goal #2: Groundwater Protection

Protect and preserve groundwater to ensure a sustainable supply of high quality drinking water.

Issue:

Residents and visitors to Cape Cod rely on the Cape's Sole Source Aquifer for drinking water. The Sagamore groundwater lens has been impacted by activities at the Massachusetts Military Reservation where plumes of contamination have tainted several public water supply wells and threatened fresh and marine waters. Similar instances of smaller scale contamination are a concern for public and private wells throughout Cape Cod. Water supply wells on the Outer Cape are experiencing increased occurrences of nitrate levels in private drinking water supplies exceeding federal limits.

Cape Cod's growing population is creating a need for additional water supplies in the future, but available land for development of future water supplies is disappearing as the intensity of land use increases and amount of open space decreases. Excessive groundwater withdrawals for drinking water and irrigation threaten the health and vitality of lakes, ponds, wetlands, and rivers by impacting water levels in localized areas.

Objectives and Strategies:

1. Protect existing water supply areas and lands suitable for future water supply development.
2. Assess adequacy of the water supply to meet future demands in terms of quality, quantity, and infrastructure.
3. Maintain recharge of aquifers.
 - (a) Manage water withdrawals and wastewater discharges so that they maintain recharge to the aquifer and they do not adversely affect water resources, wetlands, or private wells.
 - (b) Implement water conservation technologies and practices.

Goal #3: Biodiversity and Healthy Ecosystems

Protect species diversity and prevent degradation of critical wildlife and plant habitats.

Issue:

The amount and variety of open space on Cape Cod has been drastically reduced in the past few decades. Between 1971 and 1990, 24% of the forestland on the Cape was developed, reducing forested areas by 35,458 acres. Since 1990, another 15,000 upland acres have been developed. This loss of open space has resulted in a decrease in wildlife habitat on the Cape. Additionally, the ecological quality of many ponds, wetlands, and vernal pools has been degraded by groundwater withdrawals or shoreline development. Wildlife habitat is also being harmed by invasive plant and aquatic species that spread quickly and reduce plant biodiversity.

Objectives and Strategies:

1. Balance human water use with ecological needs.
 - (a) Manage water withdrawals to protect surface water ecosystems and base flow from excessive draw-downs from pumping.
 - (b) Limit impacts of groundwater withdrawals on ponds and vernal pools by promoting water conservation through education.
2. Maintain a variety of healthy habitats.
 - (a) Maintain anadromous fish runs.
 - (b) Restore degraded habitats, such as wetlands.
3. Protect rare and endangered species and their habitat.
 - (a) Implement habitat protection regulations to the fullest extent.
 - (b) Designate key areas “significant habitat” under Massachusetts Endangered Species Act of 1990.
 - (c) Certify vernal pools.
4. Avoid the introduction and spread of non-native species.
 - (a) Provide assistance with identification of invasive plant species.
5. Avoid the fragmentation of habitat.
 - (a) Protect contiguous tracts of open land for wildlife habitat.

Goal #4: Community Preservation

Link growth and development to the carrying capacity of Cape Cod's natural environment to protect and preserve wildlife habitats, biodiversity, scenic views, water quality, and recreation.

Issue:

Rapid growth and development on Cape Cod over the past several decades is impacting the quality of the environment. The population of Cape Cod increased 53% between 1970 and 1980, 26% between 1980 and 1990, and another 16% between 1990 and 2000. The increasing population spurred a dramatic increase in land development with 35,246 new housing units being built between 1980 and 1990. Population growth and development has led to declines in wildlife habitats, water quality in bays and estuaries, and groundwater quality.

Objectives and Strategies:

1. Protect 50% of remaining developable land for the protection of water supply, habitat, biodiversity, and recreation.
 - (a) Target open space acquisition based on build-out analysis and critical nutrient loads, water supply protection needs, habitat assessments, EOEA BioMap, recreation and trails needs, and the need to provide access to public waterbodies.
2. Direct development into areas capable of absorbing the impacts of growth and away from areas that can harm water quality and are critical for watershed health (e.g. wetlands, riparian areas, endangered species habitat, etc.).
 - (a) Determine compatible land uses for growth centers based on natural resources and the ability to develop appropriate infrastructure.
 - (b) Encourage development and implementation of Local Comprehensive Plans.
 - (c) Explore zoning amendments such as cluster residential, mixed use or Transferable Development Rights.
 - (d) Determine funding mechanisms to provide wastewater infrastructure.
 - (e) Use Cape Cod Commission's District of Critical Planning Concern (DCPC) and the state's Areas of Critical Environmental Concern (ACEC) designations for greater protection of natural resources.

3. Ensure the ability to amend local planning and zoning in order to implement smart growth practices and protect water quality.
 - (a) Change state zoning laws to allow more comprehensive planning on the local level.
 - (b) Develop local bylaws to protect and preserve open space, biodiversity, and water quality.

Goal #5: Watershed Stewardship

Achieve greater measurable environmental results and increased efficiency through partnerships.

Issue: Cape Cod has a broad and active environmental community with numerous efforts underway to protect, improve, and enhance the natural resources of the Cape. Communication and coordination between the various state and federal agencies and local governments, watershed organizations, businesses, regional organizations and local citizens that make up this community should be improved.

Objectives and Strategies:

1. Increase coordination and cooperation among environmental agencies and other partners.
 - (a) Support Cape Cod Commission Regional Policy Plan.
 - (b) Improve communication between state, federal, and local partners through the establishment of a watershed team with designated state agency participation.
 - (c) Establish a liaison from each town to the watershed team.
2. Inform the community of how to protect their natural resources and the financial and technical resources available to them.
 - (a) Educate citizens and encourage their participation in watershed protection.
 - (b) Develop a model watershed group.
 - (c) Develop a lake and pond advocacy network.
 - (d) Assist towns and organizations with water quality monitoring and assessments.
 - (e) Increase environmental education in the classroom.
 - (f) Support Groundwater Guardians